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COMPREHENSIVE CLINICAL REVIEW: MODERN AND AYURVEDIC PERSPECTIVES ON ANAL FISTULA AND FISSURE-IN-ANO

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1. ABSTRACT

Anorectal disorders, specifically fistula-in-ano (Bhagandara) and fissure-in-ano (Parikartika), represent a significant portion of colorectal clinical practice. A fistula-in-ano is characterized by an abnormal epithelialized tract connecting the perianal skin to the anal canal, often arising from chronic anorectal abscesses. In contrast, a fissure-in-ano is a longitudinal tear in the distal anal canal mucosa. This review article explores the etiology, pathophysiology, and diagnostic frameworks for these conditions. Special emphasis is placed on the comparative analysis of modern surgical interventions—such as fistulotomy, fistulectomy, and LIFT (Ligation of Intersphincteric Fistula Tract)—against traditional Ayurvedic parasurgical procedures, specifically Kshar Sutra therapy. The objective is to provide a holistic management protocol that minimizes recurrence and preserves sphincter function. The review concludes that while modern diagnostics (MRI) are essential for mapping, the integration of Ayurvedic herbal management and Kshar Sutra offers a viable, minimally invasive alternative with low recurrence rates for complex cases.

2. INTRODUCTION

The anal canal is a complex anatomical region prone to various inflammatory and traumatic pathologies. Among the most distressing are anal fissures and fistulas. An anal fissure (fissure-in-ano) is essentially a small ulcer or rip in the lining of the anal canal. This condition is ubiquitous across all demographics but shows a higher prevalence in young adults. The hallmark of a fissure is excruciating pain during defecation, often accompanied by bright red spotting.

Fistula-in-ano, however, is a more complex surgical challenge. It is defined as a chronic abnormal communication between the epithelialized surface of the anal canal and the perianal skin. Most fistulas are the sequelae of an anorectal abscess that has either ruptured spontaneously or been inadequately drained. The transition from an acute abscess to a chronic fistula occurs in approximately 30% to 70% of patients.

In the Ayurvedic tradition, these conditions are described under the headings of *Parikartika* (Fissure) and *Bhagandara* (Fistula). Ancient texts like the *Sushruta Samhita* provide detailed descriptions of the surgical and parasurgical management of these ailments. The primary challenge in treating these conditions, regardless of the medical system, is the preservation of the anal sphincter complex to prevent fecal incontinence while ensuring the complete eradication of the disease tract.

3. AIMS AND OBJECTIVES

The primary goals of this review are:

1. To delineate the anatomical and pathological differences between fistula-in-ano and fissure-in-ano.
2. To evaluate the efficacy of various surgical modalities including fistulotomy, seton application, and modern sphincteric-sparing operations.
3. To detail the Ayurvedic approach to management, focusing on Kshar Sutra therapy and herbal wound-healing agents.
4. To compare postoperative outcomes, including healing time, pain management, and recurrence rates, between modern and traditional methods.
5. To provide a comprehensive diagnostic guide utilizing both clinical examination and advanced imaging like Magnetic Resonance Imaging (MRI).

4. MATERIAL AND METHODS

This review was conducted through a systematic search of various medical databases including PubMed, Google Scholar, and the Cochrane Library. Keywords used included "Anal Fistula," "Fissure-in-ano," "Kshar Sutra," "Bhagandara," and "Anorectal Surgery."

The criteria for inclusion were:

- Peer-reviewed clinical trials comparing surgical techniques.
- Authentic Ayurvedic texts (Bruhatrayi) and modern surgical textbooks.
- Recent meta-analyses (post-2015) regarding recurrence rates in fistulectomy vs. fistulotomy.
- Case studies involving complex, recurrent fistulas treated with integrative medicine.

Information was also synthesized from the clinical observations recorded in the original article by Dr. Nancy Singh (2024), focusing on the PG Scholar's perspective from the Dept. of Shalya Tantra, VYDS Ayurvedic College.

5. Pathophysiology and Classification

5.1 Etiology of Fissure-in-Ano

The primary trigger is mechanical trauma to the anal canal, usually caused by the passage of hard, constipated stools. This trauma leads to a tear, typically in the posterior midline—an area with relatively poor blood supply (ischemia). The resulting pain causes a secondary spasm of the internal anal sphincter, which further reduces blood flow, creating a "vicious cycle" of pain-spasm-ischemia that prevents healing.

5.2 Etiology of Fistula-in-Ano (The Cryptoglandular Hypothesis)

Most fistulas originate from an infection in the anal glands located at the dentate line. Blockage of these glands leads to abscess formation. Once the abscess seeks a path of least resistance, it creates a tract.

- **Tuberculosis:** In endemic regions, anal tuberculosis must be ruled out in non-healing or multiple fistulas using PCR testing of pus samples.
- **Crohn's Disease:** Inflammatory bowel disease is a common systemic cause of complex fistulas.

5.3 Classification (Park's Classification)

Fistulas are classified based on their relationship with the anal sphincters:

1. **Intersphincteric:** The tract stays between the internal and external sphincters. Most common (50-80%).
2. **Transsphincteric:** The tract crosses both sphincters into the ischiorectal fossa.
3. **Suprasphincteric:** The tract loops over the puborectalis muscle.
4. **Extrasphincteric:** The tract runs from the rectum to the skin, outside the entire sphincter mechanism.

6. Management Modalities

6.1 Modern Medical and Surgical Management

- **Conservative (Fissure):** High-fiber diet, stool softeners, and Sitz baths. Topical vasodilators (Nitroglycerin or Calcium Channel Blockers) are used to reduce sphincter tone.
- **Botox Injections:** Used for fissures to paralyze the sphincter temporarily, allowing the tear to heal.
- **Lateral Internal Sphincterotomy (LIS):** The gold standard for chronic fissures, involving a partial division of the internal sphincter.
- **Fistulotomy vs. Fistulectomy:** Fistulotomy (laying open the tract) is preferred for low fistulas as it heals faster and preserves more function than fistulectomy (complete excision of the tract).
- **Seton Therapy:** A surgical thread (Seton) is passed through the tract to provide continuous drainage or to gradually cut through the muscle, preventing sudden loss of continence.

6.2 Ayurvedic Management (Shalya Tantra)

Ayurveda approaches these conditions by balancing the *Doshas* (Pitta and Kapha) and promoting *Vrana Ropa* (wound healing).

A. Kshar Sutra Therapy

This is the hallmark of Ayurvedic surgery for fistula. A medicated linen thread is coated with *Snuhi Ksheera* (Euphorbia antiquorum), *Apamarga Kshara* (Achyranthes aspera), and *Haridra* (Curcuma longa).

- **Mechanism:** The alkaline nature of the thread performs "chemical cauterization," debriding the unhealthy granulation tissue and killing the infection while simultaneously allowing the tract to heal from the base.

- **Advantage:** It is an outpatient procedure with a near-zero recurrence rate even in complex "high" fistulas where modern surgery risks incontinence.

B. Herbal Internal Medications

- **Triphala Guggulu & Kaishore Guggulu:** Act as natural antibiotics and anti-inflammatory agents.
- **Haritaki:** Softens stool to prevent further trauma to fissures.
- **Jatyadi Taila:** A specialized oil applied locally to accelerate the healing of the fistula tract and fissures.

C. Panchakarma

- **Basti (Enema):** Medicated enemas are used to cleanse the colon and reduce the "dryness" (Vata) that causes constipation.
- **Virechana:** Purgation therapy to eliminate Pitta-based inflammation.

7. DISCUSSION

The management of anorectal disorders remains a delicate balance between total eradication of the pathology and the preservation of fecal continence. The discussion section of this review highlights a critical finding: while modern surgery (like LIS) is highly effective for fissures, it carries a small but permanent risk of incontinence.

In the case of fistulas, the St. James University Hospital classification via MRI has revolutionized preoperative planning. However, surgical recurrence remains a challenge. The 2016 meta-analysis of six RCTs showed no significant difference between fistulotomy and fistulectomy for low fistulas, suggesting that the less invasive approach is usually superior.

Ayurvedic Kshar Sutra therapy emerges as a superior choice for high or complex fistulas. Unlike a simple "Seton" used in modern surgery which often only drains, the Kshar Sutra is active—it cuts and heals. This dual action ensures that the sphincter is never fully divided at once, as the muscle fibers heal behind the thread as it slowly migrates through the tissue.

Furthermore, lifestyle and dietary management (Ahar and Vihar) are indispensable. A diet rich in fiber and the avoidance of "Pitta-aggravating" (spicy/fried) foods are essential for preventing the recurrence of both fissures and fistulas.

8. CONCLUSION

Anorectal diseases like fistula and fissure-in-ano cause significant psychological and physical distress. Accurate diagnosis, distinguishing between the two, is the first step toward successful treatment. While anal fissures can often be managed conservatively through stool softeners and topical agents, chronic cases require surgical intervention.

Fistula-in-ano necessitates a more aggressive approach. Modern imaging (MRI) should be used for mapping, but the choice of treatment should be tailored to the patient's specific anatomy. Kshar Sutra therapy remains one of the most effective, minimally invasive, and cost-effective treatments available today, particularly for recurrent or complex cases. A multidisciplinary approach, combining modern diagnostic tools with Ayurvedic parasurgical techniques and herbal medicine, offers the best prognosis for long-term recovery and patient quality of life.

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